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DoD INTERNET HOST TABLE SPECIFICATION

INTRODUCTION

The ARPANET Official Network Host Table, as outlined in RFC 608, no longer suits the needs of the DoD community, nor does it follow a format suitable for internetting. This paper specifies a new host table format applicable to both ARPANET and Internet needs.

In addition to host name to host address translation and selected protocol information, we have also included network and gateway name to address correspondence, and host operating system information.

This Host Table is utilized by the DoD Host Name Server maintained by the ARPANET Network Information Center (NIC) on behalf of the Defense Communications Agency (DCA) (RFC 811). It obsoletes the host table described in RFC 608.

LOCATION OF THE STANDARD DoD ONLINE HOST TABLE

A machine-translatable ASCII text version of the new DoD Host Table is online in the file <NETINFO>HOSTS.TXT on the SRI-NIC host. It can be obtained by connecting to host SRI-NIC (10.0.0.73) from your local FTP server, logging in as user=ANONYMOUS, password=GUEST, and doing a 'get' on <NETINFO>HOSTS.TXT. The same table may also be obtained via the NIC Host Name Server.

NOTE: See Appendix A. for timeframe for cutover.

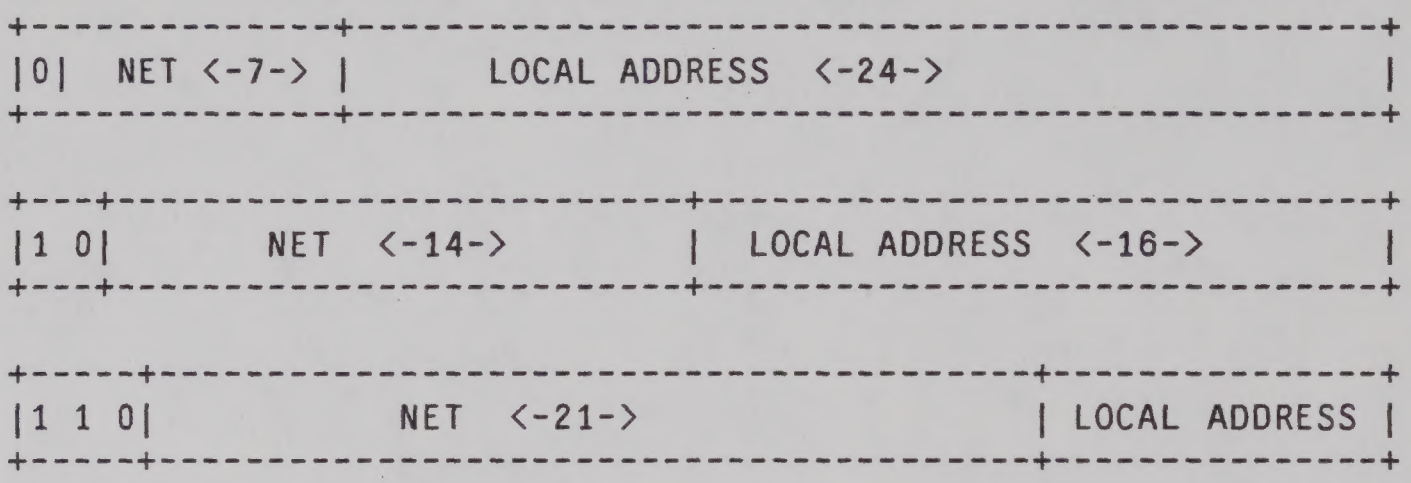
ASSUMPTIONS

1. A "name" (Net, Host, Gateway, or Domain name) is a text string up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and the minus sign (-) and period (.). No blank or space characters are permitted as part of a name. No distinction is made between upper and lower case. The first character must be a letter. The last character must not be a minus sign or period. A host which serves as a GATEWAY should have "-GATEWAY" or "-GW" as part of its name. A host which is a TIP or a TAC should have "-TIP" or "-TAC" as part of its host name, if it is an ARPANET or DoD host.

2. Internet Addresses are 32-bit addresses (RFC 796). In the host table described herein each address is represented by four decimal numbers separated by a period. Each decimal number represents 1 octet.

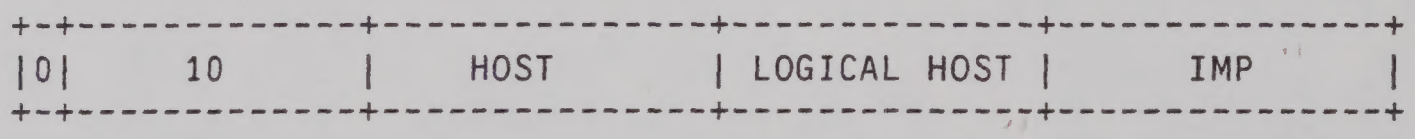
3. If the first bit of the first octet of the address is 0 (zero), then the next 7 bits of the first octet indicate the network number (Class A Address). If the first two bits are 1,0 (one,zero), then the next 14 bits define the net number (Class B Address). If the first 3 bits are 1,1,0 (one,one,zero), then the next 21 bits define the net number (Class C Address) (RFC 796).

This is depicted in the following diagram:



4. The LOCAL ADDRESS portion of the internet address identifies a host within the network specified by the NET portion of the address.

5. For the ARPANET (a Class A network), the NET address is 10 (decimal) and the LOCAL ADDRESS maps as follows: the second octet defines the physical host, the third octet defines the logical host, and the fourth defines the IMP.



(NOTE: RFC 796 describes the local address mappings for several other networks.)

6. It is the responsibility of the user using this host table to translate it into whatever format is needed for his or her purposes.

7. Names and Addresses for DoD networks, gateways, and hosts will be negotiated and registered with the Network Information Center (NIC@SRI-NIC or (415) 859-4775) before being used and before traffic is passed by a DoD host. For an interim period the NIC will attempt to keep similar information for non-DoD networks and hosts if this information is provided, and as long as it is needed, i.e., until intercommunicating network name servers are in place.

EXAMPLE OF NEW HOST TABLE FORMAT

NET : 10.0.0.0 : ARPANET :

```
NET : 18.0.0.0 : LCSNET :
GATEWAY : 10.0.0.77, 18.8.0.4 : MIT-GW :: MOS : IP/GW :
HOST : 10.0.0.73 : SRI-NIC,NIC : FOONLY-F3 : TENEX :
    NCP/TELNET,NCP/FTP, TCP/TELNET, TCP/FTP :
HOST: 10.2.0.11 : SU-TIP,FELT-TIP :::
```

SYNTAX AND CONVENTIONS

; (semicolon)	is used to denote the beginning of a comment. Any text on a given line following a ';' is comment, and not part of the host table.
NET	keyword introducing a network name/address entry
GATEWAY	keyword introducing a gateway name/address entry
HOST	keyword introducing a host name/address entry
: (colon)	is used as a field delimiter
:: (2 colons)	indicates a null field
, (comma)	is used as a data element delimiter
XXX/YYY	indicates protocol information of the type TRANSPORT/SERVICE.

where TRANSPORT/SERVICE options are specified as

"FOO/BAR" - both transport and service known
"FOO" - transport known; services not known or not running, OR
"BAR" - name is known, what it does is not

NOTE: See Appendices B and C for specific options and acronyms.

Each host table entry is an ASCII text string comprised of 6 fields, where

Field 1 = KEYWORD indicating whether this entry pertains to a NET, GATEWAY, or HOST. NET entries cannot have alternate addresses or nicknames.
Field 2 = Internet Address of Network, Gateway, or Host followed by alternate addresses
Field 3 = Official Name of Network, Gateway, or Host (with optional nicknames)
Field 4 = Machine Type
Field 5 = Operating System
Field 6 = Protocol List

Fields 4, 5 and 6 are optional.

Fields 3-6, if available, pertain to the first address in Field 2.

'Blanks' (spaces and tabs) are ignored between data elements or fields, but are disallowed within a data element.

Each entry ends with a colon.

The host table will be sorted by internet address.

GRAMMATICAL HOST TABLE SPECIFICATION

A. Parsing grammar

```
<entry> ::= <keyword> ":" <addresses> ":" <names> [":" [<cputype>]
                  [":" [<opsys>]  [":" [<protocol list>] ]]] ":"
<addresses> ::= <address> *["," <address>]
<address> ::= <octet> "." <octet> "." <octet> "." <octet>
<octet> ::= <0 to 255 decimal>
<names> ::= <netname> | <gatename>
          | <official hostname> *["," <nicknames>]
<netname>  ::= <name>
<gatename> ::= <name>
<official hostname> ::= <name>
<nickname> ::= <name>
<protocol list> ::= <protocol spec> *["," <protocol spec>]
<protocol spec> ::= <transport name> "/" <service name> |
                    <raw protocol name>
```

B. Lexical grammar

```
<entry-field> ::= <entry-text> [<cr><lf> <blank> <entry-field>]
<blank> ::= <space or tab>
<keyword> ::= NET | GATEWAY | HOST
<name> ::= <letter>[*[<letter-or-digit-or-hyphen>]<letter-or-digit>]
<cputype> ::= PDP-11/70 | DEC-1080 | C/30 | CDC-6400...etc.
<opsys>   ::= ITS | MULTICS | TOPS20 | UNIX...etc.
<transport name> ::= TCP | NCP | UDP | IP...etc.
<service name> ::= TELNET | FTP | SMTP | MTP...etc.
<raw protocol name> ::= <name>
<comment> ::= ";" <arbitrary text><cr><lf>
```

Notes:

1. Zero or more 'blanks' between separators " , : " are allowed. 'Blanks' are spaces and tabs.
2. Continuation lines are lines that begin with at least one blank. They may be used anywhere 'blanks' are legal to split an entry across lines.

BIBLIOGRAPHY

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3. Postel, J. Internet Protocol, RFC 791, Information Sciences Inst., Univ. of Southern Calif., Marina Del Rey, Sept. 1981.

4. Postel, J. Address Mappings, RFC 796, Information Sciences Inst., Univ. of Southern Calif., Marina Del Rey, Sept. 1981.

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APPENDIX A. CUTOVER DETAILS

The cutover date for use of the new host table is 1 May 1982. The table below indicates which files will contain the old or the new versions of the host table for what period of time. After 1 August 1982, the old format for <NETINFO>HOSTS.TXT (specified in RFC-608) will no longer be supported.

May 1982	June-July 1982	August 1982 on
<NETINFO>HOSTS.TXT old version	<NETINFO>HOSTS.TXT new version	<NETINFO>HOSTS.TXT new version
<NETINFO>NHOSTS.TXT new version (test)	<NETINFO>NHOSTS.TXT new version	old version discontinued
<NETINFO>OHOSTS.TXT old version	<NETINFO>OHOSTS.TXT old version	

These periods of overlap should give implementors time to make the necessary changes to programs accessing this file.

APPENDIX B. TRANSPORT/SERVICE OPTIONS AND ACRONYMS

Current TRANSPORT/SERVICE options are:

IP	TCP/FTP
IP/GW	TCP/MTP
NCP	TCP/NNS
NCP/FTP	TCP/RJE
NCP/RJE	TCP/SMTP
NCP/SMTP	TCP/TELNET
NCP/TELNET	TCP/TFTP
NCP/NNS	UDP
NVP	
TCP	

Note: "TCP" implies IP is also implemented

Acronym definitions for the above protocol options are:

FTP - File Transfer Protocol
GW - Gateway Protocol
IP - Internet Protocol
MTP - Mail Transfer Protocol
NCP - Network Control Protocol
NNP - NIC Internet Name Server Protocol
NVP - Network Voice Protocol
RJE - Remote Job Entry Protocol
SMTP - Simple Mail Transfer Protocol
TELNET - TELNET Protocol
TCP - Transmission Control Protocol
TFTP - Trivial File Transfer Protocol
UDP - User Datagram Protocol

APPENDIX C. OPERATING SYSTEM ACRONYMS

Current operating system acronyms are:

ASP	KRONOS	RSX11M	VMS
AUGUST	MCP	RT11	WAITS
BKY	MOS	SCOPE	
CCP	MPX-RT	SIGNAL	
DOS/360	MULTICS	SINTRAN	
ELF	MVT	TENEX	
EPOS	NOS	TOPS10	
EXEC-8	NOS/BE	TOPS20	
GCOS	OS/MVS	TSS	
GPOS	OS/MVT	UNIX	
ITS	RIG	VM/370	
INTERCOM	RSX11	VM/CMS	